Impact of Project ECHO on Community ED Providers' Perceptions of Child Abuse Knowledge and Access to Subspecialists for Child Abuse and Neglect

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WHAT'S NEW

Case-based tele-education sessions, utilizing the Project Extension for Community Healthcare Outcomes model, extended the reach of child maltreatment experts to statewide community emergency department providers with little access to consultation and facilitated the development of a virtual community of practice.

BACKGROUND

PROBLEM IDENTIFICATION: Victims of child abuse and/or neglect (CAN) are frequently cared for in emergency departments (EDs) where providers must recognize and report injuries suggestive of CAN to prevent additional injury or death. Almost 90% of pediatric visits occur in community EDs with limited access to subspecialty CAN consultation.[1] Abusive injuries are missed more frequently in these EDs compared to pediatric EDs.[2,3] Efforts to improve CAN care in EDs have been limited to screening instruments and sporadic educational interventions. Prior work noted that real-time case discussions and access to expert consultants could improve care.[4] Innovative methods to connect CAN experts to community ED providers could lead to improved CAN-related knowledge and practice.[5]

EDUCATIONAL STRATEGY: Project Extension for Community Health Outcomes (ECHO) facilitates real-time multidirectional learning and relationship-building between specialists and frontline providers practicing in local communities.[6] ECHO has been used to link primary-care clinicians with experts to develop capacity in providing complex chronic disease care to patients in underserved regions using low-cost videoconferencing technology to support provider-to-provider tele-education. Participants learn through 1) case-based discussions; 2) interactions with geographically distant peer participants and experts; and 3) brief didactics.[7] No studies have examined the use and feasibility of ECHO to improve ED providers' pediatric knowledge or access to pediatric experts.

The goals of this qualitative study were to describe 1) the feasibility of ECHO implementation in the ED setting and 2) perceptions of CAN-related knowledge and relationships among participants after ECHO program participation.

NEEDS ASSESSMENT: We developed the curriculum using Kern's framework.[8] A literature review informed the selection of 6 core topics: 1) Sentinel injuries; 2) Sexual assault; 3) Neglect; 4) Abusive head trauma, 5) Fractures; and 6) Roles of Child Protective Services (CPS). An online survey was conducted to inform the selection of 6 additional topics: 1) National and local epidemiology; 2) Adolescents' legal rights; 3) Ethics of child maltreatment; 4) Human trafficking; 5) Opioid Use; and 6) Mental health outcomes/resources. Invited faculty developed learning objectives for each topic with a corresponding 15-minute didactic.

IMPLEMENTATION: The faculty team included 2 CAN and 2 pediatric ED physicians, a CPS manager and a mental health specialist. The Connecticut American Academy of Pediatrics provided administrative support and

managed the program website. Community ED participants (nurses, physicians, and advanced level practitioners) were recruited to include urban/rural settings of varying pediatric volumes through presentations at statewide conferences and targeted recruitment of an existing network of providers that played a role in improving pediatric care in their EDs. Continuing Medical Education was provided to participants at no cost as an incentive. Twelve hour-long monthly sessions (September, 17 to August, 18) consisted of a 15-minute didactic and 45 minutes of facilitated case-discussions. Sessions alternated times to accommodate the ED participants' schedules. The session on the ethics of child maltreatment was conducted in-person to encourage additional interactions and to celebrate completion of the project. Recorded didactics and related resources (articles and pathways) were shared with participants directly and on a website (http://ct-aap.org/ProjectECHO) for participants to disseminate to their ED colleagues. Recent literature, learning opportunities, and questions were shared asynchronously via an email listserv.

EVALUATION: Focus groups were conducted to understand participants' experiences, to examine benefits and challenges of the program and to inform future iterations. An interview guide consisting of open-ended questions focused on experiences with the learning strategies and tools and the potential impact on patient care. Participants who had attended ≥6 sessions were purposefully sampled. An independent trained researcher (L.R.) conducted two 60-minute focus groups by video-conference that were audiotaped and transcribed verbatim. Using conventional content analysis, 2 researchers (L.R. and G.T.) independently reviewed the transcripts, applied initial codes to summarize and categorize portions of data, then collectively refined codes and created themes.[9] When discrepancies arose, text segments that had been assigned the same code previously were reviewed and the coders engaged in discussion to attain consensus. This study was granted exemption from Institutional Review Board review at Yale University School of Medicine.

RESULTS: Forty-one individuals from 14 EDs participated: 12 (29.3%) physicians, 17 (41.5%) nurses, 9 (21.2%) advanced level practitioners, 2 (4.9%) social workers, and 1 (2.4%) paramedic. The median number of participants per session was 19 (interquartile range 16, 22). Twenty-seven (65.9%) attended ≥3 ECHO sessions, while 12 (29.3%) from 10 unique institutions attended ≥6 ECHO sessions.

Three physicians, 3 nurses and 1 physician assistant participated in the focus groups; all participants were engaged in the focus group discussions. Four main themes emerged (the Table provides related quotations):

1) Developing relationships: Participation enabled improved (and often new) communication and relationship-building between the participants, the CAN experts and CPS. Participants described examples of consultation with the CAN experts while working in the ED after participation and an increase in face-to-face meetings with local CPS workers.
2) Dissemination: Participants disseminated ECHO learnings by providing summaries of topics to other ED staff and facilitating additional local trainings by experts.

Table. Quotations for Each Theme

Themes	Reflective Quotations
1. Developing Relationships	Through the ECHO program, DCF (local child protective service agency in Connecticut) participation has been helpful. . .relationship building led to a face-to-face meeting with our local DCF office that involved not just myself but nursing as well from our hospital and I think it just facilitated a better or mutual understanding of what we both do – DCF as well as the ED – and how we can work more efficiently together.
	ECHO definitely helps build a network. . .we always have called our institution the island because we feel like we're completely outcasted and it made me feel so much more connected. . .We certainly will continue to reach out to people and again, bounce ideas off of them. ECHO opened a lot of doors and allowed that whole networking process to get even bigger.
	. . .before [ECHO], I didn't even really know about DART (child abuse team at academic medical center). . . I didn't even really realize what their whole role was and what a huge resource they are for us. . .ECHO expanded on that and just gave a lot more information. . .
2. Dissemination of ECHO learning	[ECHO] certainly changed some of our practices and it raised awareness of our practices. I took the slides and made people aware that they are available on that particular website. We try to talk about it and in not "set up" ways, like during huddles – more informal-type education and then just whenever there is something that's really applicable, just talking about it with the providers and making the nurses aware
	We have taken the sentinel injury lecture to all of our providers – both physicians and mid-levels – to increase awareness on sentinel injury screening. We have also developed and we're implementing a new trauma algorithm, where if certain traumatic injuries are identified, it triggers us to consult with the child abuse team to consider the possibility of non-accidental trauma which I think is a great way to increase our thoughtfulness about protection and referral.
3. Application of ECHO learning to practice	We've moved to implement a policy where children are placed in a gown routinely, regardless of the chief complaint, to try to make them easier to assess for sentinel injuries
	I became a resource and people text me and come to me and ask me questions that either are happening in the department or have happened and go, "Hey what do you think about this?"
4. Feasibility	ECHO makes it possible for you have an interactive exchange and see slides and actually have a "face-to-face" with people whereas it's just not realistic, I think, when you're drawing people so far away from different parts of the state who are so busy, to have it be in person (vs over tele-conference).

3) Applying learning into practice: Participants enrolled in ECHO to improve patient care by increasing their own knowledge and by enhancing their ability to serve as local subject matter experts. Participants recounted anecdotes of facilitating institutional-level changes (eg, placing young children in gowns for skin exams or implementing trauma algorithms in their EDs) after participation.
4) Feasibility: Participants affirmed the feasibility and utility of ECHO as a learning modality. They identified ease of access (including access to postsession archived materials and the ability to participate from varying locations) and exposure to multidisciplinary perspectives among the most valuable aspects.

DISCUSSION, LIMITATIONS, AND FUTURE DIRECTIONS

ECHO improved perceptions of knowledge and practice as well as access to subspecialty consultation. ECHO fostered the development of a CAN community of practice, consisting of people with a shared interest in CAN and a desire to provide better care as they interact to help each other and share information, among community ED providers, CPS staff, and CAN experts.[10] This community of practice has the potential to facilitate case discussions among different providers and aid in the implementation of CAN-related best practices.[10] Participants reported that ECHO was a feasible intervention; however, with only 30% completing half the program, more work is needed to understand factors that influence sustained participation.

Limitations include the lack of evaluation of clinical outcomes; a small sample size although no new themes emerged after analyzing the second focus group; social desirability in which participants may have modified answers to present themselves in a favorable light; and limited transferability to regions of the country with fewer specialists and larger distances between academic medical centers and community EDs.

Future directions include evaluating patient level-outcomes, such as the number and quality of consultations/referrals to child abuse specialists and/or CPS, and identifying factors that may improve ED providers' engagement in a longitudinal tele-education experience.

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